

AMENDMENTS TO THE DRAWINGS

The attached sheet of drawings includes changes to Figure 2. This sheet, which includes Figure 2, replaces the original sheet including Figure 2.

Attachment: Replacement Sheet

REMARKS

Favorable reconsideration of this application in light of the following discussion is respectfully requested.

Claims 1-14 are presently active in this case. The present Amendment amends Claims 1-9 and adds new Claims 10-14 without introducing any new matter.

The outstanding Office Action objected to the Drawings as failing to show labels as described in the specification. The Abstract of the Disclosure, the Specification and Claim 4 was objected to because of informalities. Claims 6-9 were objected to as being in improper multiple-dependent form. Claims 1-5 were rejected under 35 U.S.C. §112, second paragraph, as indefinite. Claim 1 was rejected under 35 U.S.C. §102(a) as anticipated by Katsuhiko et al. (European Patent No. 0867970 A2, herein referred as to "Katsuhiko"), Applicant's admitted prior art.

In response to the objections to the Specification and the Abstract, the Specification is amended and the Abstract of the Disclosure is rewritten to correct the noted informalities, grammatical and idiomatic errors, and to be made consistent with the changes to the drawings. In light of their formal nature, the changes to the Specification and Abstract do not raise a question of new matter.

In response to the objection to the Drawings, submitted herewith is a Letter Submitting Drawing Sheets along with 1 Replacement Sheet for Figure 2 adding the appropriate labels for blocks 31, 32, 35 and 36.

In response to the rejection under 35 U.S.C. §112, second paragraph, Claim 1-9 are amended to correct the formalities. In view of amended Claims 1-9, it is believed that all pending claims are definite and no further rejection on that basis is anticipated. If, however, the Examiner disagrees, the Examiner is invited to telephone the undersigned who will be happy to work with the Examiner in a joint effort to derive mutually acceptable language.

Further, in response to the rejection under 35 U.S.C. §112, second paragraph, Applicant respectfully traverses that the phrase “previously provided with a norm” is confusing.¹ In vector mathematics, when using abstract vector spaces, the notion of “normed vector space” is used. A vector space on which a norm is defined, is subsequently called a “normed” vector space. A normed vector space can be turned into a metric space and allows the definition of notions such as continuity and convergence. For any normed vector space, we can define the distance between two vectors u and v as $\|u-v\|$.

Furthermore, Applicant traverses that the recitation “M” needs more specific definition.² M is defined in original Claim 2 as being M complex samples taken at M distinct angles. Therefore M can be described as the number of sampling directions and belongs to the angular range covered by the array of antennae.³ The recitation of “M” is therefore clear and definite.

In order to vary the scope of protection recited in the claims, new Claims 10-14 are added. New Claim 10 recites the same features as original Claim 8, but depends now upon Claim 7. New Claim 11 recites the same features as original Claim 6, but now depends upon Claim 3. New Claim 12 depends upon Claim 1 and recites that “the norm provided to the vector space is an Euclidian norm.”⁴ New Claim 13 depends upon Claim 2 and recites features regarding approximating a vector of samples.⁵ New Claim 14 depends upon Claim 1 and recites that the array of antennae is a circular array.⁶ Since all the new claims find support in the disclosure as originally filed, they are not believed to raise a question of new matter.⁷

¹ See outstanding Office Action at page 5, lines 11-13.

² See outstanding Office Action at page 5, lines 16-17.

³ See Applicant’s Specification at page 3, lines 4-19.

⁴ Finds support in Applicant’s Specification at page 3, lines 13-17.

⁵ Finds support in Applicant’s Specification at page 5, lines 28-30.

⁶ Finds support in Applicant’s Specification at page 10, lines 1-3.

⁷ See MPEP 2163.06 stating that “information contained in any one of the specification, claims or drawings of the application as filed may be added to any other part of the application without introducing new matter.”

In response to the rejection of Claim 1 under 35 U.S.C. §102(a), Applicant respectfully requests reconsideration of this rejection and traverses the rejection, as discussed next.

Briefly recapitulating, Applicant's invention as recited in Claim 1, relates to a method of obtaining a gain function for an array of antennae. As explained in Applicant's specification at page 1, lines 1-14, Applicant's invention improves upon conventional methods of obtaining gain functions because it makes it possible to obtain an antenna gain function for a base station in a mobile telecommunication system in transmission or reception mode, which is invariant by the change of frequency. The claimed invention thus leads to improved elimination of interfering signals in the field of antenna signal processing.⁸

Turning now to the applied reference, the Katsuhiko patent discloses a radio transmitting apparatus and gain control method, where a gain control is performed on an input signal to an orthogonal modulator. However, Katsuhiko fails to teach Applicant's claimed generating a sub-space which is normed and orthogonal with respect to a space of gain functions. On the contrary, Katsuhiko explicitly teaches that some analog signals are converted to an IF frequency signal S4 in an orthogonal modulator 113 by performing orthogonal modulation on the baseband signal of the antenna A.⁹ Some analog signals being converted to an IF frequency signal, as taught by Katsuhiko, is *not* a generating of a sub-space which is normed and orthogonal with respect to a space of gain functions, as claimed by Applicant.

Therefore, the applied reference fails to teach or suggest every feature recited in Applicant's claims, so that Claim 1 is patentably distinct over the cited references.

⁸ See Applicant's specification at page 1, lines 6-7.

⁹ See Katsuhiko at page 3, lines 43-46.

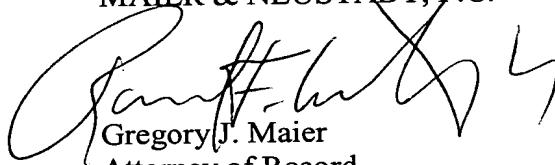
Accordingly, Applicant respectfully traverses, and requests reconsideration of, the rejection based on the Katsuhito patent.¹⁰

Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal Allowance. A Notice of Allowance for Claims 1-14 is earnestly solicited.

Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact Applicant's undersigned representative at the below listed telephone number.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Gregory J. Maier
Attorney of Record
Registration No. 25,599
Raymond F. Cardillo, Jr.
Registration No. 40,440



22850

Tel. (703) 413-3000
Fax (703) 413-2220
GJM/PJCS/NPS/maj
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¹⁰ See MPEP 2131: "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference," (Citations omitted) (emphasis added). See also MPEP 2143.03: "All words in a claim must be considered in judging the patentability of that claim against the prior art."